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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,408	09/25/2001	Robert Moerman	30394-1049	9235

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EXAMINER

LUDLOW, JAN M

ART UNIT

PAPER NUMBER

1743

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,408

Applicant(s)

MOERMAN ET AL.

Examiner

Jan M. Ludlow

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 1743

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desai in view of Moon et al (2003/0092195) and Morozov.

5. Desai teaches an electrospray method in which fluid is moved through a 1-3 μm orifice at 50 nl/min (.833 nl/s) while spaced a distance of 0.25-.4 mm from an electrode at the entrance to a mass spectrometer.

6. Desai fails to teach deposition on a surface of a substrate.

Moon teaches a method of electrospray transfer from a capillary in the claimed size range at a flow rate in the claimed [0036]- [0040]. Moon additionally teaches that the electrospray method can be used to deposit material from one microplate to another, for, e.g., proteomic screening ([0144] – [0146] and Figs. 23A-B). Moon further cites Desai at [0029].

Morozov teaches a method similar to that of Moon. The substrate carries the counter electrode (Figs. 4A-C) and raised lands 64 of specified properties are used to bind transferred molecules. Wet deposition (Fig. 1B) and processing under vapor are taught. Note that this reference corresponds to WO 98/58745 cited in the International Search Report.

It would have been obvious to perform electrospray using the parameters taught for electrospray transfer by Desai to deposit liquid on a substrate in order to use electrospray for an alternative method as taught by Moon. It would have been obvious to space the tip the same distance from the substrate as from the mass spec inlet in order to preserve the tip to electrode spacing because the electrode is used to generate the electrospray. Note that Moon teaches spacing the electrode (generically) from the tip in Figure 1, and Morozov teaches providing the electrode on the substrate. It would

have been further obvious to use the techniques of Morozov in the method of Desai and Moon in order to control and enhance deposition as taught.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
8. Pui et al (6093557) corresponding to WO98/56894 cited in the International Search Report does not teach or suggest the instant invention because a spacing of 5mm – 3cm is taught (col. 16, line 10).
9. Mann et al teaches a capillary in the claimed size range operating at a flow rate as claimed spaced 1.5 mm from the counter electrode (col. 4).
10. Ramsey and Karger additionally teach electrospray transfer from a microfluidic device to a substrate.
11. The declaration filed on March 28, 2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the Moon reference.

The evidentiary showing is not commensurate in scope with the claims. The showing supports a 60 um inner diameter (as compared to less than 150 um in claim 1), a flow rate of 50 pl/s or less or lower than 100 pl/s (as compared to between 0.01 pl/s and 10 nl/s in claim 1, or between 0.01 pl/s to 100pl/s in claim 21). The substrate is not disclosed as being used in an assay as recited in claim 2. With the exception of an enzyme, the materials of claim 3 are not described. With respect to claims 7, 9-10, the broader scope of claim 7 and specific embodiments of claims 9-10 are not shown. The limitations of claims 11-19 are not described. The flow rate variation of claims 5 and 20 is not described.

12. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that the spacing between the tip and the mass spec inlet is not the distance between the tip and the target because the target is inside the mass spec, but the examiner has not relied upon the mass spec embodiment as teaching the target, but rather the embodiment of Figure 23 B in which samples are transferred to a planar substrate with wells. Applicant argues that because ionization is involved in the transfer to Mass Spec, it is improper to use the spacing taught for Mass Spec for the deposition embodiment, but the instant claims do not preclude ionization, and in that the same parameters are used in the instant invention, it would appear that ionization occurs as a result of some other process in addition to the electrospraying per se.

Applicant argues that the instant limitations pre-date Moon by virtue of the declaration filed under 37 CFR 1.131, but the instant claims are not commensurate in scope with the declaration.

Applicant argues that Morozov cannot be combined with the Mass Spec embodiment of Moon, but the linking teaching of alternatively using the same electrospray device to deposit on a substrate taught by Moon is the linking teaching. The claimed operational parameters are taught by Desai.


13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow
Primary Examiner
Art Unit 1743

Jml
March 6, 2006